

**Amendments to the Claims:**

The following listing of claims will replace all prior versions, and listings, of claims in the application:

1. (Cancelled)

2. (Currently Amended) The wavelength multiplexing on-chip optical interconnection circuit according to ~~Claim 1, claim 16,~~

the circuit blocks being optically and electrically connected to each other.

3. (Currently Amended) The wavelength multiplexing on-chip optical interconnection circuit according to ~~Claim 1, claim 16,~~

at least a part of the optical waveguide being provided on top surfaces of the circuit blocks.

4. (Currently Amended) The wavelength multiplexing on-chip optical interconnection circuit according to ~~Claim 1, claim 16,~~

at least a part of the optical waveguide being provided on the circuit blocks to traverse the circuit blocks.

5. (Currently Amended) The wavelength multiplexing on-chip optical interconnection circuit according to ~~Claim 1, claim 16,~~

at least a part of the optical waveguide being provided to detour around the circuit blocks.

6. (Currently Amended) The wavelength multiplexing on-chip optical interconnection circuit according to ~~Claim 1, claim 16,~~ further comprising:

at least one of a light emitting element and a light receiving element being electrically connected to each of the circuit blocks,

the light emitting element emitting a light component having a predetermined wavelength into the optical waveguide, and

the light receiving element receiving a light component having a predetermined wavelength from the optical waveguide.

7. (Canceled)

8. (Currently Amended) The wavelength multiplexing on-chip optical interconnection circuit according to ~~Claim 7, claim 16,~~

at least a part of the optical waveguide covering being at least one of the first micro-tile shaped elements and the second micro-tile shaped elements.

9. (Currently Amended) The wavelength multiplexing on-chip optical interconnection circuit according to ~~Claim 1, claim 16,~~

the circuit blocks being any one of a CPU, a memory circuit, a DSP, an RF amplifying circuit, an image sensor, and a bio sensor, and

the optical waveguide being a transmission line of data signals or clock signals.

10. (Canceled)

11. (Currently Amended) The wavelength multiplexing on-chip optical interconnection circuit according to ~~Claim 7, claim 16,~~

a plurality of the first micro-tile shaped elements being provided on one of the circuit blocks,

a plurality of the second micro-tile shaped elements being provided on another of the circuit blocks,

one of the first micro-tile shaped elements selectively emitting a light component having a first wavelength,

another of the first micro-tile shaped elements selectively emitting a light component having a second wavelength, which differs from the first wavelength,

one of the second micro-tile shaped elements selectively receiving the light component having the first wavelength,

another of the second micro-tile shaped elements selectively receiving the light component having the second wavelength.

12. (Currently Amended) The wavelength multiplexing on-chip optical interconnection circuit according to ~~Claim 1, claim 16,~~

a plurality of the integrated circuit chips being mounted on a substrate, and the plurality of integrated circuit chips being optically connected to each other at least through the micro-tile shaped elements having a light emitting function or a light receiving function and the optical waveguide provided on the substrate.

13. (Currently Amended) The wavelength multiplexing on-chip optical interconnection circuit according to ~~Claim 1, claim 16,~~

a plurality of the integrated circuit chips being mounted on a substrate, the integrated circuit chips being tightly bonded to each other, and the integrated circuit chips being optically or electrically connected to each other.

14. (Currently Amended) An electro-optical device, comprising:  
the wavelength multiplexing on-chip optical interconnection circuit according to ~~Claim 1, claim 16,~~

15. (Currently Amended) An electronic apparatus, comprising:  
the wavelength multiplexing on-chip optical interconnection circuit according to ~~Claim 1, claim 16,~~

16. (New) An optical interconnection circuit, comprising:  
an integrated circuit chip;

a first circuit block that is provided on the integrated circuit chip, the first circuit block including a first light emitting element;

a second circuit block that is provided on the integrated circuit chip, the second circuit block including a first light receiving element; and

an optical waveguide that is provided on the integrated circuit chip, the optical waveguide optically connecting the first light emitting element and the first light receiving element.

17. (New) The optical interconnection circuit according to claim 16, wherein:
  - the first circuit block further including a second light emitting element,
  - the second circuit block further including a second light receiving element,
  - the optical waveguide optically further connecting the second light emitting element and the second light receiving element,
  - a wavelength of a first light emitted by the first light emitting element being different from a wavelength of a second light emitted by the second light emitting element,
  - the first light receiving element receiving the first light, and
  - the second light receiving element receiving the second light.
18. (New) The optical interconnection circuit according to claim 16, wherein:
  - the first circuit block further including a second light receiving element,
  - the second circuit block further including a second light emitting element,
  - the optical waveguide optically further connecting the second light emitting element and the second light receiving element,
  - a wavelength of a first light emitted by the first light emitting element being different from a wavelength of a second light emitted by the second light emitting element,
  - the first light receiving element receiving the first light, and
  - the second light receiving element receiving the second light.

19. (New) An optical interconnection device, the device comprising:

a first light emitting element that emits a first light;

a second light emitting element that emits a second light whose wavelength is

different from a wavelength of the first light; and

an optical waveguide that transmits the first light and the second light.

20. (New) The optical interconnection device according to claim 19, wherein the

first light emitting element and the second light emitting element being included in a first

circuit block that includes a first circuit driving the first light emitting element and a second

circuit driving the second light emitting element.

21. (New) The optical interconnection device according to claim 19, wherein:

the first light emitting element being included in a first circuit block that

includes a first circuit driving the first light emitting element, and

the second light emitting element being included in a second circuit block that

includes a second circuit driving the second light emitting element.

22. (New) The optical interconnection device according to claim 20 further comprising:

a first light receiving element that receives the first light; and

a second light receiving element that receives the second light, wherein:

the first light emitting element and the second light emitting element

being included in a second circuit block that includes a third circuit driving the first light

receiving element and a fourth circuit driving the second light receiving element,

the first light emitting element and the first light receiving element

being optically connected through the optical wave guide, and

the second light emitting element and the second light receiving

element being optically connected through the optical waveguide.

23. (New) The optical interconnection device according to claim 21 further comprising:

a first light receiving element that receives the second light; and

a second light receiving element that receives the first light, wherein:

the first light emitting element being included in the first circuit block

that includes a third circuit driving the first light receiving element,

the second light emitting element being included in the second circuit

block that includes a fourth circuit driving the second light receiving element,

the first light emitting element and the second light receiving element

being optically connected through the optical waveguide, and

the second light emitting element and the first light receiving element

being optically connected through the optical waveguide.